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April 13, 2017

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street S.W.
Washington D.C. 20554

**Re: Oral *Ex Parte* Notice
GN Docket No. 14-177, IB Docket Nos. 15-256 and 97-95;
RM-11664; and WT Docket No. 10-112**

Dear Ms. Dortch:

On April 11 and 12, the undersigned communicated by telephone and email with Michael Ha of the Commission's Office of Engineering and Technology regarding the Commission's consideration in its Spectrum Frontiers proceeding of whether to remove its current prohibition on unlicensed transmissions aboard aircraft in the 57-71 GHz frequency band.¹ As Boeing explained in its comments, the prohibition is unnecessary because the low power level of onboard wireless communications devices, combined with the substantial attenuation of aircraft skin and free space losses, provide a high degree of assurance that use of the 57-71 GHz band on aircraft would be imperceptible to passive services.

With respect to aircraft attenuation, studies conducted within the International Telecommunication Union ("ITU") study process have confirmed that modern aircraft can be expected to provide 35 dB of fuselage attenuation,² which includes 10 dB of attenuation to in-cabin signals above 1 GHz even under worst-case viewing angles, and up to 45 dB of attenuation for other viewing angles and non-cabin or other highly shielded areas.³ These estimates are

¹ See Use of Spectrum Bands Above 24 GHz For Mobile Radio Services, et al., GN Docket No. 14-177, *Notice of Proposed Rulemaking*, FCC 15-138, ¶¶ 304-306 (Oct. 23, 2015) ("*Notice*").

² See Compatibility analysis between wireless avionic intra-communication systems and systems in the existing services in the frequency band 4 200-4 400 MHz, Report ITU-R M.2319, Annex 1, Table A-1.4 (Nov. 2014).

³ See Technical characteristics and spectrum requirements of Wireless Avionics Intra- Communications systems to support their safe operation, Working Party 5B, Report ITU-R M.2283-0 at 22, Table 5; see also Annex 3 (Dec. 23, 2013).

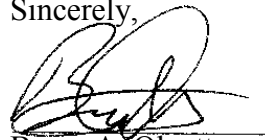
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consistent with the results from Boeing's own testing. Boeing recognizes that the ITU studies did not include specific tests of transmitting devices in the 57-71 GHz band, but the propagation characteristics of such frequencies can be expected to result in even greater attenuation than was documented in the ITU studies of lower frequency bands.

Boeing therefore continues to believe that the immediate removal of the Section 15.255(a)(1) prohibition is fully warranted. Boeing, however, would agree to the following measures by the Commission while further tests involving the 57-71 GHz band are completed. First, Boeing would accept a Commission decision to retain for the present the prohibition on airborne operations in WiGig Channel 1 (covering 57.24 GHz to 59.4 GHz) as long as the aeronautical prohibition is removed for unlicensed devices in the rest of the 57-71 GHz band. Second, Boeing urges the Commission to eliminate the prohibition on the operation of unlicensed WiGig devices on aircraft while they are on the ground. Aircraft are designed with systems that automatically detect whether an aircraft is on the ground or airborne and can control the operation of onboard devices based on this information. Third, Boeing and the aviation industry plan to continue to conduct further tests to demonstrate that use of WiGig Channel 1 by unlicensed devices on aircraft in flight will not result in harmful interference to passive users in these frequencies. Therefore, Boeing requests that the Commission keep this issue open for further consideration.

Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Bruce A. Olcott", written over a horizontal line.

Bruce A. Olcott

Counsel to The Boeing Company